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09/384,932	08/26/1999	CLAUS TONDERING	09918/024001	8504

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EXAMINER

AVELLINO, JOSEPH E

ART UNIT

PAPER NUMBER

2143

DATE MAILED: 09/29/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

pre

Office Action Summary	Application No.	Applicant(s)
	09/384,932	TONDERING, CLAUS
	Examiner	Art Unit
	Joseph E. Avellino	2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08-20-03.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-24 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

1. Claims 1-28 are pending in this examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 6, 25, and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Office respectfully requests the Applicant to point out in the specification where it is discussed that regulating the resource such that the total resource usage does not exceed the preset amount per unit of time.

4. Furthermore no mention of any priority levels to either a process or a resource was discussed in the specification. If this is an oversight, the Applicant is requested to direct the Examiner as to the appropriate passages of the specification which discuss setting priorities to both resources and processes and using them to determining allocation hierarchy.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 10, 14, 17, 18, 22, 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The claims 1, 10, 17, 18, 22, and 24 recite the limitation, "...allowing increased usage of the resource by the at least two processes based on said decreasing". This is unclear. It is undeterminable from the claim as to how the value is decreased and the weighting between the two processes how the decreasing has occurred (i.e. is the entire decreasing based on the usage of the first process, equally between the two or more, or weighted unequally between the processes. Furthermore it is undeterminable how by decreasing the usage of the resource allows the increased usage of the resource. As it is read this would allow for decreased usage of the resource since the total resource usage is decreased. Correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1, 4, 5, 8-10, 17-18, and 21-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe (USPN 6,125,396).

10. Referring to claims 1 and 26, Lowe discloses a method of managing usage of a resource (i.e. access rates to a shared file server) in a network system, the network system comprising:

indicating a value representing total amount of usage of the resource by at least two processes using the resource (it is inherent that the system taught by Lowe maintains some form of memory that stores the amount of resource usage in the system by the statement "based on current usage of shared resource 428 by other clients..." col. 4, line 30; col. 7, lines 15-16);

indicating an available amount of credit (usage reserve) for usage of the resource by the at least two processes based on said value (e.g. abstract; Figure 3, reference character 324; col. 5);

decreasing said total resource usage according to a function of time (since Lowe discloses that the process repeats in intervals, such as per second, it inherently decreases the total resource usage based on a function of time) (col. 5, line 55-62; col. 7, line 39 to col. 8, line 45)

regulating usage of the resource by the at least two processes based on the indicated available credit and allowing increased usage of the resource by the at least two processes based on said decreasing (the example taught by Lowe discloses that at the one second interval the desired usage rate is 10 blocks/second, the second time

interval is 7 blocks/second, third time interval is 7 blocks/second, fourth time interval is 12 blocks/second) (Figure 4; col. 5, line 55-62; col. 7, line 39 to col. 8, line 45).

Lowe does not disclose that the total resource usage is decreased using a preset amount per unit of time. However it is well known and expected in the art that a leaky bucket system has the ability to have a predetermined (i.e. constant) drain level (i.e. constant rate usage by the clients of Lowe) and would have been obvious to one of ordinary skill in the art to provide for decreasing the value according to a predetermined function of time for simplicity of programming and to provide for the server to exercise some authority as to the rate at which clients may download data, thereby enhancing overall QoS for all the clients as well as for a more efficient bandwidth monitoring.

11. Referring to claim 4, Lowe discloses the network operates in a real-time networking environment (col. 6, lines 49-67). Although the embodiment primarily discussed in Lowe refers to a non-real-time client, the network is a real-time environment. Furthermore Lowe discloses that real-time clients usually have a reserve set at zero, however "the configuration data on which the reserve for the real-time clients is based on could be changed" which indicates that a reserve can be set at a non-zero number, indicating the system can work for a real-time client (col. 6, lines 53-63).

12. Referring to claim 5, Lowe discloses the method is modeled as a leaky bucket (Figure 2; col. 3, line 55 to col. 4, line 53).

13. Referring to claim 7, Lowe discloses regulating usage of the resource comprises modifying the available credit by adjusting a maximum resource usage value (reserve value) (col. 5, line 55-65).

14. Referring to claim 8, Lowe discloses notifying the process (client) of the availability of the credit when the indicated available credit is greater than a requested usage amount if the indicated available credit is initially less than the requested usage amount (e.g. client requests a rate at 20 blocks/second, resource coordinator 420 notifies the client that a rate of 10 blocks/second has been allotted to the client) (col. 7, lines 12-23).

15. Referring to claim 9, Lowe discloses notifying the process (client) comprises sending a message to a network address (it is inherent that a client on a network as a network address and that any message sent to the client is sent to the address of the client) of the process (client) when the requested usage amount is greater than the available credit (col. 7, lines 12-23).

16. Claim 18, is rejected for similar reasons as stated above. Furthermore, Lowe discloses a network including a plurality of devices, comprising:
a plurality of resources running in the network ("...governing access to computer resources") (col. 5, lines 1-9);

computer software, residing on a computer readable medium at each device (Lowe discloses that the client governs its own access to shared resource 428, col. 7, lines 20-23, therefore the client must have software residing on computer readable medium at each device) accessing the plurality of resources.

17. Referring to claim 22, Lowe discloses the available amount of credit comprises a difference between a maximum resource usage allocated to the at least two processes and the amount of resource currently used by the at least two processes (col. 8, lines 40-45).

18. Referring to claim 23, Lowe discloses the available amount of credit increases per unit of time by an estimated value of the resource that becomes available per unit of time (col. 8, lines 17-23).

19. Claims 17, 21, and 24 are rejected for similar reasons as stated above. Furthermore Lowe discloses the system comprises computer software, residing on a computer-readable medium at a device connected to a network (col. 3, lines 10-25).

20. Referring to claim 25, Lowe discloses a method of managing usage in a resource as stated in the claims above. Lowe does not disclose determining a priority for a process for a resource and allocating the resource based on the priority. However it is well known in the art that higher priority processes (i.e. interrupt threads in a computer,

master computer nodes in a network, etc.) get preference over lower priority processes (i.e. garbage collection, other menial system processes, etc.) for resource contention since they are of higher importance. Therefore it would have been obvious to one of ordinary skill in the art to provide for prioritizing resource allocation based on the priority of the processes to allow for higher priority processes not to be impeded by a lower priority process.

Claims 2, 3, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Overby, Jr. et al. (USPN 6,016,503) (hereinafter Overby).

21. Referring to claim 2, Lowe discloses a method of managing usage of a resource in a network system, however Lowe does not disclose that the resource comprises one of memory space or system processor time. Lowe does, though, disclose that "an embodiment of the invention applies to any resource with a limited capacity that is shared concurrently by users of the resource" (col. 9, lines 13-15). In analogous art, Overby discloses another method of managing usage of a resource in a network system wherein the shared resource is memory space (control the allocation of memory) (col. 5, lines 13-15). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Lowe with Overby to provide a more efficient method of memory utilization, thereby reducing processing overhead and

wasting unused memory on processes which do not require their total allotted memory space.

22. Referring to claim 3, Lowe discloses a method of managing usage of a resource in a network system. Lowe does not disclose that the network comprises an embedded computer system. In analogous art, Overby discloses another method of managing usage of a resource wherein the network comprises an embedded computer system (col. 1, lines 13-20). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Lowe with Overby to provide a more efficient method of memory utilization, thereby reducing processing overhead and wasting unused memory on processes which do not require their total allotted memory space.

23. Claims 19, and 20 are rejected for similar reasons as stated above.

Claim 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Garner et al. (USPN 6,112,085) (hereinafter Garner).

24. Referring to claim 6, Lowe discloses a method for managing usage of a resource as stated in the claims above. Lowe does not disclose the method further comprising determining the priority of the resource and allocating the resource in response to an increased priority of the resource. Garner discloses:

determining a priority of the resource (col. 58, lines 57-63); and
allocating the resource based on the priority of the resource (col. 58, line 64-67).

It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Garner with Lowe to allow preferred resources to be allocated to increase overall speed and efficiency of the network.

25. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Harrington et al. (USPN 6,289,012) (hereinafter Harrington).

26. Referring to claim 11, Lowe discloses the method of managing a plurality of resources as stated in the claims above. Lowe further discloses associating with each software tool a maximum usage level (col. 7, lines 13-23). Lowe does not disclose allocating a descriptor representative of any of the software tools to any of the plurality of devices, although this can be inferred since a request from the client process to the resource coordinator 420 to request access to the shared resource 428 (col. 7, lines 13-15). Harrington discloses allocating a descriptor (i.e. hash ID) representative of any of the software tools to any of the plurality of devices (col. 15, lines 46-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Lowe with Harrington for more efficient data downloads and data resiliency as supported in Harrington (col. 3, lines 18-34).

27. Referring to claim 12, Lowe discloses:

decrementing the maximum usage level of the software tool in response to the use of the resource associated with the tool by any of the plurality of devices (col. 7, line 40 to col. 9, line 9);

calculating an available credit based on the usage of the resource associated with the tool as a function of the maximum usage level (col. 7, line 40 to col. 9, line 9); and

indicating to a device waiting to use the resource associated with the tool of the available credit (col. 7, line 40 to col. 9, line 9).

28. Referring to claim 14, Lowe further discloses incrementing the maximum usage level (assigned rate) to at least correspond to the specified usage level (i.e. usage level available on the resource) (e.g. abstract).

29. Referring to claim 15, Lowe in view of Harrington discloses disclose the method of managing a plurality of resources as stated in the claims above. Although Lowe discloses allowing a resource to exceed its assigned rate, Lowe does not specifically state overriding the usage level to allow a device access to one of the plurality of resources. Harrington discloses when a pre-allocated memory element is not available, the list will override the reallocated space and the list "grows to add additional memory elements to the List" (col. 15, lines 25-30). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Low with

Harrington for more efficient data downloads and data resiliency as supported in Harrington (col. 3, lines 18-34).

30. Referring to claim 16, Lowe in view of Harrington disclose the method of managing a plurality of resources as stated in the claims above. Harrington further discloses destroying the software tool in response to a request from one of the devices (col. 16, lines 52-56 and Figure 26). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Harrington with Lowe to allow for efficient memory management and to facilitate garbage collection in the system.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Ho et al. (USPN 6,578,082) (hereinafter Ho).

31. Lowe discloses a method of managing usage of resources as stated in the claims above. Lowe does not specifically disclose the preset amount represents an estimated amount of resource which comes available per unit of time. Ho discloses preset amount represents an estimated amount of resource which comes available per unit of time (col. 7, lines 18-41). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Lowe with Ho to increase efficiency of the system by not calculating the actual resource availability, rather the estimated value, thereby reducing processing overhead and increasing throughput.

Response to Amendment

32. Applicants other arguments dated February 3, 2003 have been considered but are not persuasive.

33. In the remarks, Applicant argued in substance that (1) Lowe does not disclose decreasing the total resource value according to a predetermined function of time.

34. As to point (1), decreasing a total resource value according to a predetermined function of time is a well known and obvious feature in many “leaky bucket” models. Furthermore, it is well known and expected in the art that a leaky bucket system has the ability to have a predetermined (i.e. constant) drain level (i.e. constant rate usage by the clients of Lowe) and would have been obvious to one of ordinary skill in the art to provide for decreasing the value according to a predetermined function of time for simplicity of programming and to provide for the server to exercise some authority as to the rate at which clients may download data, thereby enhancing overall QoS for all the clients as well as for a more efficient bandwidth monitoring.

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

36. Bennett (USPN 5,828,878) discloses a method and a scheduler for controlling when a server provides service with rate control to an entity.

37. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (703) 305-7855. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (703) 308-5221. The fax phone numbers

for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

JEA
September 8, 2003



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100